

DESCRIPTIONS OF NEW FOSSIL SHELLS FROM THE TERTIARY OF CALIFORNIA.

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SCALARIA *Lamarck*.Subgenus *Opalia*, H. & A. Ad.*Opalia varicostata*, Stearns. Plate 27, Figs. 2-5.

Shell elongated-conical, turreted, tapering, solid, imperforate, aperture ovate, peristome continuous, thickened; dingy to clear white; suture well defined; whorls united, exceedingly variable in convexity and altitude; specimens all decollate, or truncated, equally solid, though varying in length from .75 to 2.45 inches, showing four and one-half whorls within the first measurement to five in the latter. Perfect specimens have probably from 8 to 12 whorls, or even more. Longitudinal ribs 9 to 12, varying in number, prominence, and regularity, as well as in obliquity, when compared with the axial line of the shell, and, in some specimens, irregularly thickened and distorted by the intrusion of a varical rib more or less conspicuously. In some individuals the termination of the rib at the suture gives the upper part of the whorls a crenulated appearance, and the suture in all specimens is more or less waved, dependent upon the prominence of the ribs, which terminate anteriorly at and join a transverse rib at about the middle of the basal whorl.

Number of specimens 22, all in good condition, save the erosion of the apex.

This is one of those plastic forms which exhibit great variability, but which when a sufficient number of specimens are compared, show well-marked characteristics.

Had the twenty-two specimens examined as above been collected by several persons, and, therefore, divided into many and smaller parcels, and sent, as quite likely would have been the case, to different authors and museums, and thus too widely separated for comparison, it is highly probable, when the latitude of variation which this form presents is considered, that three or four species would have been made out of the above material, which Mr. Henry Hemphill, the collector, kindly placed in my hands for determination.

This is a large species, and perfect specimens, probably, sometimes measure three inches in length; one extreme specimen is strongly suggestive of *Turritella*, and others resemble the living *Opalia borealis*, Gould, common at different places along the coast. It forms a curious, but complete link between the forms like *S. grönlandica*, and the typical *Opaliæ*.

Locality, about eight miles north of San Diego, California, associated with *Pecten* and *Vola*.

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Opalia anomala, Stearns. Plate 27, Fig. 1.

Shell solid, imperforate, elongated-conical, spire gradually tapering; whorls convex, when perfect probably 11 to 14 in number, nearly smooth, being marked only by incremental, and, occasionally, in some specimens, by an outgrown varix; suture well defined; basal whorl traversed transversely by an inconspicuous rib, varying in prominence, in some specimens barely discernible; the convexity or angularity of the lower part of the basal whorl modified by the presence or absence of the basal rib.

Number of specimens 10. Average length 2 inches.

Longitude of smallest	.	.	.	.	1.87 inches
“ of largest	.	.	.	.	2.37 “

As the apex whorls in all of the specimens are wanting, a careful estimate would add .25 inch to the foregoing average, making the latter 2.25 inches in perfect shells.

This species is readily recognized by the absence of longitudinal ribs, though one or two specimens indicate faint plications near the apex.

Locality, the same as the preceding species.

Collected by Mr. Henry Hemphill, of Oakland.

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